

REMARKS

Reconsideration of the application is requested.

Claims 1-8 remain in the application. Claims 1, 6, 7, and 8 have been amended.

* Before continuing with the specifics of this amendment, applicants request that that Examiner confirm that their preliminary amendment dated April 11, 2002 was indeed made of record and entered in the instant application. A copy of the preliminary amendment, with an original signature, is enclosed herewith. Should the amendment not yet be of record, applicants request that the amendment be entered of record prior to the entry of the instant amendment.

More specifically with regard to the instant amendment, the claims have been amended to emphasize the fact that we are dealing here with a tool that is used for "hot forming." As defined in the specification, the term "hot forming" pertains to the forming of metals and alloys in their solid state. See page 1, lines 12-16. In order to avoid any possible confusion and to alleviate a potential shortcoming of the definitional content of the term "hot forming", we have added the terms "solid state" in each of the claims.

Claim 6 incorporates the requirement that the metal to be formed be in its solid state in the body of the claim.

While claim 8, which is an improvement claim, contains the limitation in the preamble, the "solid state" is imported as a limitation in the claim as a whole. In other words, the nature of claim 8 as an improvement claim incorporates the "solid state" requirement as a feature of the claim.

The "solid state" requirement appears in the preamble of claim 1. While it is understood that terms appearing in the preamble are not generally imported into the body of the claim and they do not usually form a proper limitation, the term has been introduced in the preamble to set the stage and to limit the applicability and the utility of the claimed alloy to the solid state hot forming application. Should the Examiner be of the opinion that this distinction does not indeed eliminate the prior art reference to Grierson et al., he is requested to telephone counsel so that acceptable language may be worked out.

Turning now more specifically to the art rejection, the Examiner correctly recognized that the alloy composition of the reference Grierson and that of the claims overlap.

As noted above, however, the claims of the instant application are directed to the use of the alloy for tools used for hot forming of copper and copper alloys.

The prior art of hot forming copper and copper alloys utilized tools formed of entirely different alloys, such as Inconel® or Stellite® or tungsten-heavy metal alloys of a different composition. As explained in the specification, the use of such alloys in such tools lead to strong scoring at the tool surface and to the formation of edge tears during the forming of corner profiles.

The reference to Grierson et al. does not pertain to the hot forming of solid metal bodies. Instead, the reference pertains to metal melts and the die casting of such metals. Grierson et al. point out that the improvements obtained with their invention pertains to the following:

alloys which have increased resistance to thermal fatigue.

alloys which have increased resistance to corrosion.

shaping members which will operate at higher temperatures.

die casting dies or molds, cores and other metal shaping members which have a long life.

die casting dies, molds, cores, core pins and other metal shaping members which will be resistant to

erosion when subjected to the washing action of molten metals and alloys

Grierson et al., col. 1.

casing dies, and other shaping members which will resist cracking or spalling when subjected to the thermal stresses created by molten metals and alloys being forced into dies and molds under pressure.

Grierson et al., col. 2, lines 2-5.

It is thus entirely clear that the objects pursued by Grierson et al. pertain to melt casting and not to hot forming. The patent further explains, with reference to an exemplary embodiment, that

Tests have been conducted on various tooling components such as die casting dies, core pins, plungers, sprue pins, etc. In a typical die casting die wherein brass castings were formed

The temperature of the brass was about 1750° F.

Grierson et al., col. 7, lines 6-9 and 11-12.

While the statements found in Grierson et al. and pointed out by the Examiner do indeed appear in the reference, that is the reference does indeed mention "extrusion" and "hot-forging" and "dies and other shaping members", it is entirely clear that the reference pertains only to high temperature molten metal applications.

The tools of the reference come into contact with molten metal and they are primarily exposed to corrosive

oxidation and to erosive loading. The tools of the reference Grierson et al., therefore, are subjected to entirely different exposures as compared with the tools of the claimed invention. Furthermore, Grierson et al. not only mentions copper and copper alloys, but also mentions as equivalents ferrous materials, aluminum and aluminum alloys, as well as zinc and magnesium and their alloys.

Those of skill in the art could therefore not pick and choose from the reference and condense therefrom a teaching which goes specifically to the utilization of the claimed alloy in the hot forming of copper and copper alloys. There is, therefore, no teaching in Grierson et al. that specifically pertains to advantages in the hot forming of copper and copper alloys.

Claims 6 and 8 explicitly call for the hot forming of copper and copper alloys. Furthermore, the term "hot forming" is specified as pertaining to a workpiece of copper or copper alloy which is in a solid state. Claim 1. contains the same definitional content in the preamble and

a licensee request that the language of the preamble be

In summary, none of the references, whether taken alone or in any combination, either show or suggest the features of claims 1, 6, and 8. These claims are, therefore, believed to be patentable over the art and since all of the dependent claims are ultimately dependent thereon, they are believed to be patentable as well.

In view of the foregoing, reconsideration and allowance of claims 1-8 are solicited.

If an extension of time for this paper is required, petition for extension is herewith made.

Respectfully submitted,



For Applicants

WERNER H. STEMER
REG. NO. 34,956

WHS:tk

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Lerner and Greenberg, P.A.
P.O. Box 2480
Hollywood, Florida 33022-2480
Tel.: (954) 925-1100
Fax: (954) 925-1101